



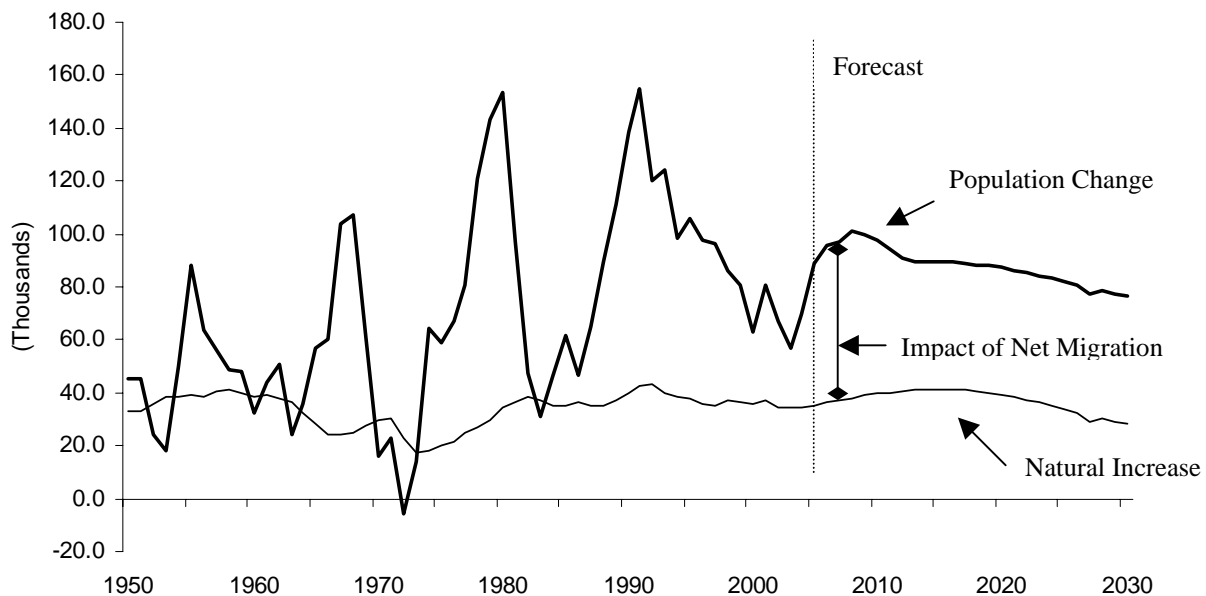
## CHAPTER 1

# Long-Term Forecasts of Washington Population and Net Migration

**P**OPULATION PROJECTION is an integral part of the long-term forecast for Washington labor force, employment, and income. Population growth contributes to economic growth in the state by making available the labor needed for production and by increasing the demand for goods and services.

Long-term population growth results from the combined effects of two sources of change: natural increase and net migration. Natural increase is the excess of births over deaths, and net migration is the difference between in-migration and out-migration. Changes in the level of natural increase have affected Washington's population growth over time. Fluctuations in net migration, however, have had more dramatic effects. In Figure 1-1, the contribution of net migration is illustrated by the gap between total population change and natural increase in a given year.

**Figure 1-1**  
**Population Change, Natural Increase and Net Migration: Washington**



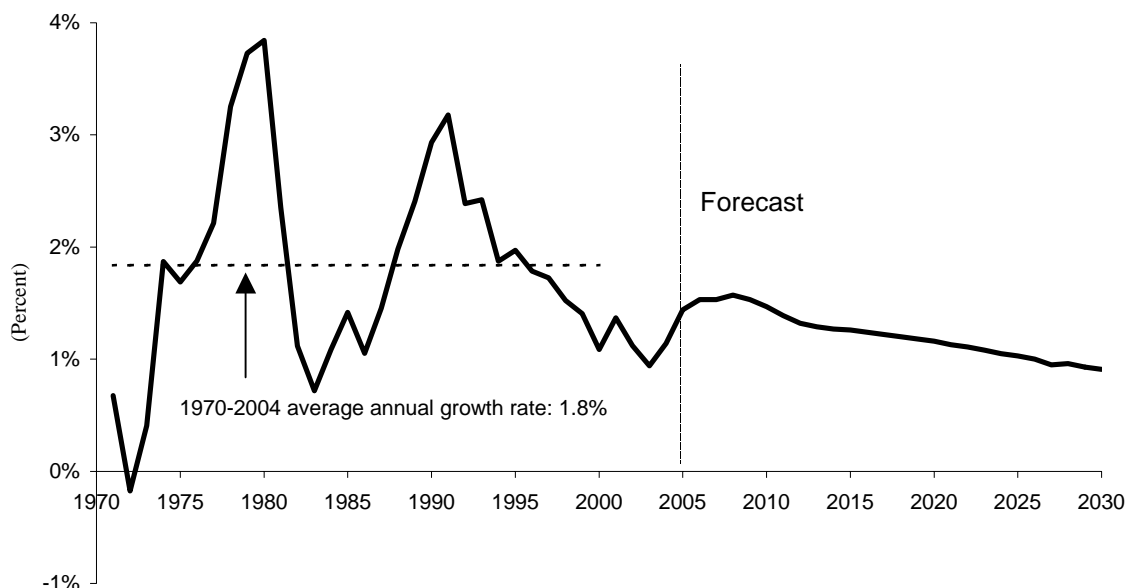
Between 1970 and 2004, population in Washington grew 77 percent from 3.4 to 6.2 million, averaging 1.8 percent per year. However, year-over-year changes fluctuated widely, ranging from a high of 3.8 percent in 1979-80 to a low of negative 0.2 percent in 1971-72.

Net migration, which responds to changing economic conditions, accounted for most of the variation in the yearly state population figures (Figure 1-1). Change in the number of births over time depends on the growth, age structure, and fertility rate of the female population. The long-

run trend of births in Washington reflects long, generational waves of socioeconomic change—the Great Depression, the post World War II baby boom, the baby bust of the 1970s, and the baby boom echo of the 1980s.

Population growth, fueled by migration into Washington, was relatively rapid during the economic booms of the late 1970s and late 1980s (Figure 1-2). Over the next 25 years, the population is expected to grow at an annual rate of 1.2 percent, reaching 8.5 million by 2030. Net migration will continue to play a major role in the state population growth.

**Figure 1-2**  
**Annual Percentage Change in Population: Washington**



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## Net Migration

People move into or out of Washington for a variety of reasons. Non-economic factors, such as relocations of military personnel, retirement migration (principally persons over age 65), and pursuit of social and natural amenities, account for only a small portion of net migration. The majority of interstate population movements are due to relative changes in the labor market and economic conditions among the states. An expanding economy and labor market tends to “pull” people into an area. Conversely, a contracting economy and labor market tends to “push” people out of it. Net migration is the difference between out-migration and in-migration. These “push” and “pull” factors have made net migration the major contributor to population change in Washington.

The effects of the “push” and “pull” factors are evident in the historical pattern of the state’s net migration. For example, large net migration occurred as a result of rapid economic expansions in Washington during the late 1970s and again in the late 1980s. When the state economy

slumped in 1970-73 and 1981-83, net migration dropped sharply; in several of those years there was actually negative net migration.

In the first half of the 1990s, slower economic growth in the state reduced net migration and restrained population growth, but not to the same extent as in the past. One major reason is that employment growth in Washington remained positive during the 1990-91 national recession. This made Washington more attractive to jobseekers than other states that were losing employment. The relative strength of the Washington economy compared to the rest of the U.S. pulled migrants into the state. In addition, the California economy, which experienced a steep employment decline starting about the same time as the U.S. recession, remained depressed well into 1993. Even though Washington experienced a significant reduction in aerospace jobs beginning in 1991, the overall Washington economy continued to perform much better than California. Between 1990 and 1994, California experienced a net out-migration of over 400,000 persons per year. Washington received a significant amount of these Californian out-migrants. These two factors, among others, contributed to fairly high levels of net migration for Washington during the early 1990s, even when the state's economy slowed significantly.

The picture reversed, however, over the next five years. From 1995 to 2000, while state economic growth accelerated, U.S. and the Californian economies also strengthened. As a result, the level of net migration dropped steadily.

Change in "traded sector" employment has been a major determinant of Washington net migration. The traded sectors of the state economy include manufacturing, federal government, information services, and professional and management services. These industries are considered "traded" because they bring revenue and income into the state. For example, most of the software products produced in Washington are sold to businesses and consumers outside the state.

Traded sector industries usually demand skilled workers that cannot be sufficiently supplied from the local labor pool. Firms in these industries recruit workers, especially professionals, from the national and, even global, labor market. During expansionary periods, jobs created in the state's traded industries typically require specialized skills or experience that are in short supply among the existing Washington worker pool. For example, to increase development and production to the desired levels, the aerospace industry may require as many as 3,000 additional engineers in a single year. If this number of aerospace engineers is not available in the state, they will have to come from elsewhere in the country or from overseas.

Traded sectors also tend to provide high-wage jobs, which is another incentive to attract workers from outside the state. High wages not only induce people to change jobs, they also help cover the costs of interstate relocation. Cost is a critical concern, especially if migrating workers need to bring family members with them.

Net migration has a significant impact on the size of the state labor force. Since a majority of in-migration to Washington is associated with employment opportunities, these economic migrants tend to be active labor market participants, therefore contributing to the growth of labor force. Also, the gross (i.e., in- plus out-) flow of migration is generally 5 to 10 times the magnitude of

net migration; this is the reason why many public and private business operations (e.g., issuance of driver's license, rental housing, etc.) are strongly affected by the level of net migration.

## Forecast of Net Migration

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The methodology used to forecast net migration includes two steps. First, the Office of Financial Management (OFM) and the Employment Security Department (ESD) jointly develop an employment forecast for the traded sectors. This initial forecast is based on a system of equations determining employment in each manufacturing sector, the federal sector, and the producer services sector. The producer services sector consists of information services, professional services, management and related services.

Next, a single equation model is developed which treats Washington net migration as a function of traded sector job growth within the state relative to economic conditions in the rest of the country and in California. The specific factors included in the model to determine levels of Washington net migration are:

- The percentage change in Washington's traded sector employment relative to percentage change in the U.S traded sector employment.<sup>1</sup>
- The percentage change in Washington's traded sector employment relative to percentage change in California traded sector employment.<sup>2</sup>
- The national unemployment rate.

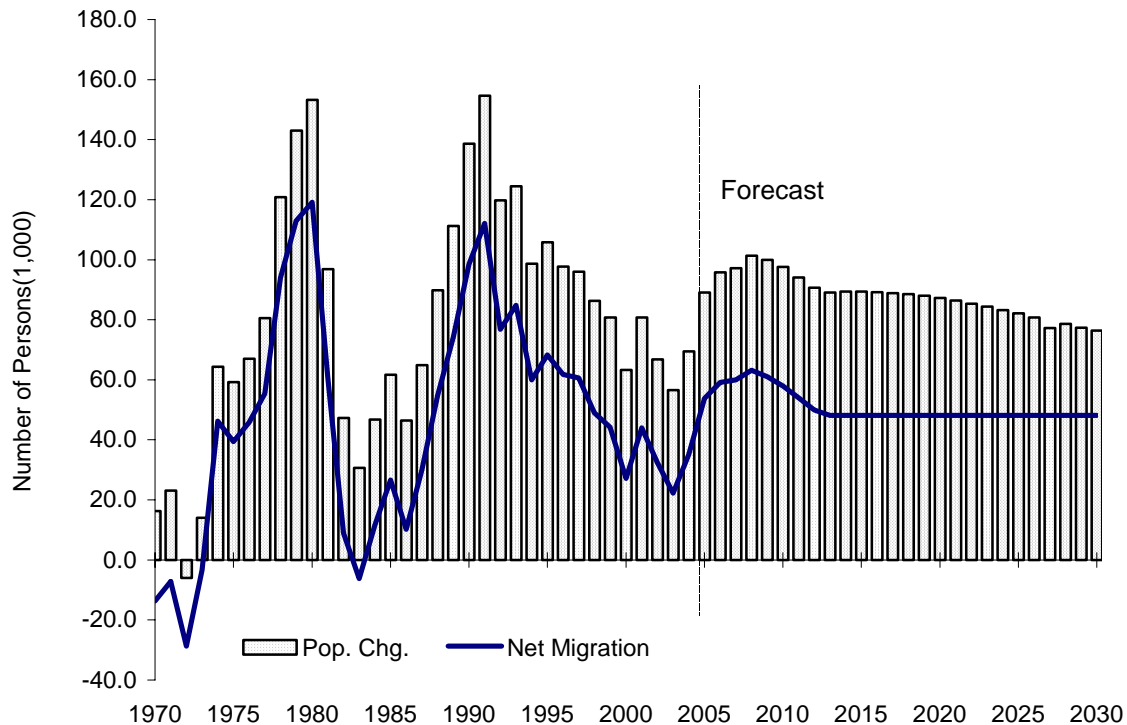
Based on these factors, net migration for Washington is predicted to increase during the next five years, rising from 35,100 persons per year in 2004 to about 63,000 in 2008. In the longer term, annual net migration is allowed to return to its historical average of 48,100 per year. (Population statistics, including net migration, are shown in Table 1-1 at the end of this chapter.)

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<sup>1</sup> The U.S. forecast is from Global Insight's long-term trend forecast.

<sup>2</sup> The California forecast was obtained from the Global Insight's Regional Services.

Figure 1-3  
Net Migration and Population Change



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Net migration is forecasted to increase in the near-term, because Washington is expected to outperform the U.S. in growth of the traded sector employment, making Washington an attractive destination for potential migrants. Growth in manufacturing employment in Washington is expected to exceed that in the U.S. and California. Also, employment growth in traded services in Washington is expected to be higher than that for the U.S. in the early years of the forecast. Historically, Washington has experienced significantly faster employment growth in producer services than the U.S. This is expected to continue, though the difference will decline. In the last ten years of the forecast period, the producer services sector in Washington is projected to grow at about the same rate as the U.S.

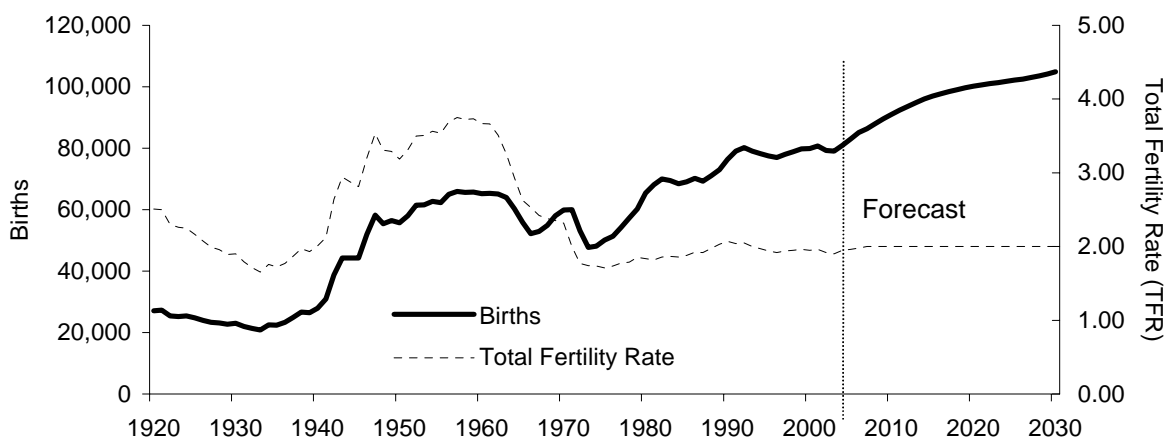
## Natural Increase

Natural increase is the second component of population growth. Natural changes include additions to the population through births and reductions due to deaths. The state's natural population increase is projected to average 37,100 a year between 2005 and 2030.

The total fertility rate in Washington, which reflects the estimated average number of births to women during their childbearing years, is expected to reach and remain at the replacement level

of 2.0 births per woman through the end of the forecast period (Figure 1-4). This is somewhat above the all-time low of 1.6 births per woman in 1933, but far below the peak of 3.7 births per woman in 1957. The fertility rate is not expected to rise significantly, in part because of the continued high labor force participation rate for women of childbearing age. (See next chapter.) Also, compared to earlier generations, women are marrying later, having births later, more likely to live independently, and spending more time on education. These factors, in combination with technological advancements in birth control, tend to lower the fertility rate.

**Figure 1-4**  
**Births and the Total Fertility Rate: Washington**



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While the fertility rate is expected to remain stable throughout the forecast period, the number of women of childbearing age will grow steadily. As a result, the annual number of births in Washington is expected to rise from 80,900 in 2003-04 to about 104,900 in 2029-30.

By definition, the labor force includes only those workers age 16 and older. Births have a delayed effect on labor force growth, as individuals born today will be potential labor force participants in 16 years. This implies that recent population changes due to births will affect labor force growth in the later years of the forecast. Similarly, births over the past 16 years are closely associated with the labor force growth in the 2005-2020 period. Although the annual number of births in Washington during the early 1970s dropped to less than 50,000, the number of births rebounded to 70,100 in 1982. By 1990 the total number of births in the state had increased to 76,400. The increased births in the 1980s and 1990s will contribute to the growth of the state workforce over the next two decades.

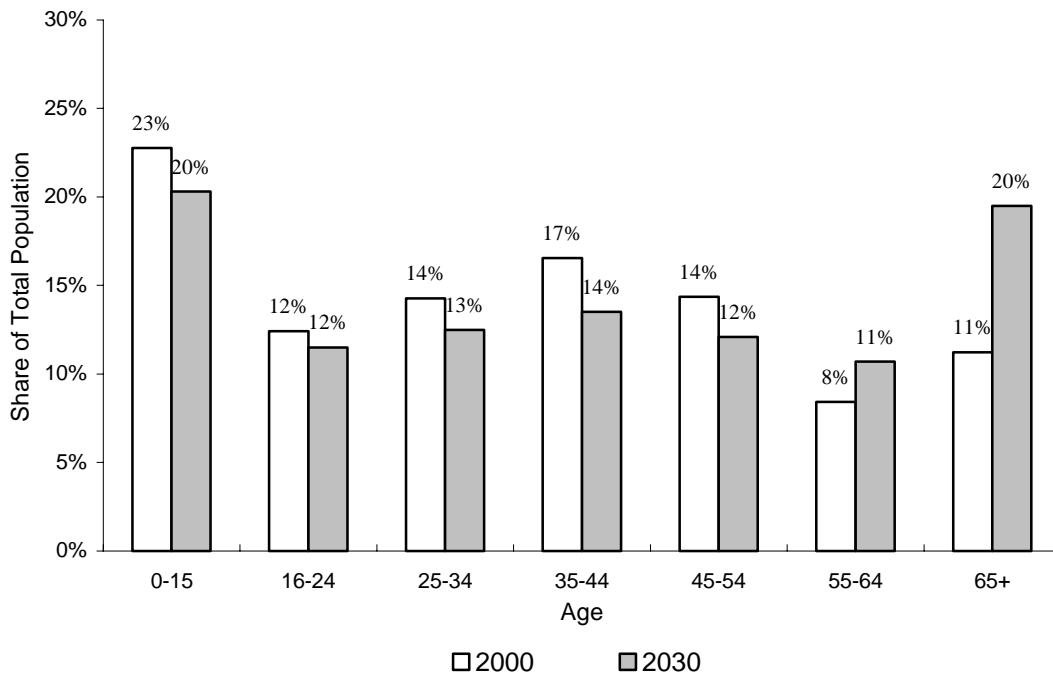
Mortality, the other component of natural increase, will also rise throughout the forecast period. Life expectancy increased rapidly between 1920 and 1960 and continued to improve through the 1980s, albeit at a much slower pace. Many improvements in the prevention of infant deaths have already been achieved; so future progress in life expectancy at birth is likely to be more modest.

The forecast calls for both male and female life expectancy in Washington to continue improving at a slow but steady rate. As in the nation as a whole, the state's population will be aging. Higher mortality rates associated with an aging population will more than offset improvements in life expectancy, and aggregate death rates will increase. The proportion of all deaths due to deaths of the elderly will increase during the forecast period. This suggests that mortality will not have a major impact on labor force growth, because most of the deaths will occur at ages when individuals are unlikely to be working.

Over the next few decades, aging of the population, both in the state and throughout the nation, will be a profound demographic phenomenon. In Washington State, people 65 years of age and older will account for a growing share of population, rising from 11 percent in 2000 to 20 percent in 2030 (Figure 1-5). The trend will have widespread economic and public policy implications ranging from the expanding demand for personal and health services at the local level to increasing pressure on the federal Social Security and medical insurance programs. (See the next chapter.)

Table 1-1 on page 11 shows the historical and projected Washington population trend, and the components of population change.

**Figure 1-5**  
**Aging of Population: Washington**



**Table 1-1**  
**Components of Population Change: 1990 – 2030**

Period	Population End of Period	Components of Change								
		Population Change		Births		Deaths		Natural	Net Migration	
		Number	%	Number	Rate *	Number	Rate *	Increase	Number	Rate *
1990-1991	5,021,300	154,600	3.18	79,100	15.99	36,600	7.40	42,500	112,100	22.68
1991-1992	5,141,200	119,800	2.39	80,200	15.79	37,200	7.31	43,100	76,800	15.11
1992-1993	5,265,700	124,500	2.42	79,100	15.20	39,400	7.56	39,700	84,800	16.29
1993-1994	5,364,300	98,700	1.87	78,200	14.71	39,500	7.44	38,700	60,000	11.29
1994-1995	5,470,100	105,800	1.97	77,500	14.30	40,000	7.38	37,500	68,300	12.60
1995-1996	5,567,800	97,700	1.79	77,000	13.95	41,200	7.46	35,900	61,800	11.20
1996-1997	5,663,800	96,000	1.72	78,000	13.90	42,600	7.59	35,400	60,600	10.79
1997-1998	5,750,000	86,300	1.52	78,800	13.81	41,600	7.28	37,300	49,000	8.59
1998-2000	5,830,800	80,800	1.41	79,800	13.77	43,100	7.45	36,600	44,200	7.63
2000-2000	5,894,100	63,300	1.09	79,900	13.62	43,700	7.46	36,100	27,200	4.64
2000-2001	5,974,900	80,800	1.37	80,700	13.60	43,900	7.40	36,800	44,000	7.41
2001-2002	6,041,700	66,800	1.12	79,300	13.20	44,900	7.47	34,400	32,400	5.39
2002-2003	6,098,300	56,600	0.94	79,100	13.03	44,700	7.37	34,400	22,200	3.66
2003-2004	6,167,800	69,500	1.14	80,900	13.19	46,500	7.58	34,400	35,100	5.73
2004-2005	6,256,900	89,100	1.44	83,000	13.37	47,800	7.69	35,300	53,800	8.66
2005-2006	6,352,700	95,800	1.53	85,100	13.50	48,500	7.69	36,700	59,100	9.37
2006-2007	6,449,900	97,200	1.53	86,400	13.49	49,200	7.68	37,200	60,000	9.37
2007-2008	6,551,100	101,300	1.57	88,000	13.53	49,900	7.68	38,100	63,200	9.72
2008-2009	6,651,000	99,900	1.53	89,600	13.57	50,600	7.67	38,900	61,000	9.24
2009-2010	6,748,700	97,600	1.47	91,000	13.58	51,400	7.67	39,600	58,000	8.66
2010-2011	6,842,800	94,100	1.39	92,300	13.59	52,200	7.68	40,100	54,000	7.95
2011-2012	6,933,500	90,700	1.32	93,700	13.60	53,000	7.70	40,700	50,000	7.26
2012-2013	7,022,600	89,100	1.29	94,900	13.59	53,800	7.72	41,000	48,100	6.89
2013-2014	7,112,000	89,400	1.27	96,000	13.58	54,700	7.74	41,300	48,100	6.81
2014-2015	7,201,400	89,400	1.26	97,000	13.55	55,600	7.77	41,300	48,100	6.72
2015-2016	7,290,600	89,200	1.24	97,700	13.49	56,600	7.81	41,100	48,100	6.64
2016-2017	7,379,500	88,900	1.22	98,500	13.42	57,600	7.86	40,800	48,100	6.56
2017-2018	7,468,000	88,500	1.20	99,100	13.35	58,700	7.91	40,400	48,100	6.48
2018-2019	7,556,000	88,000	1.18	99,700	13.28	59,800	7.97	39,900	48,100	6.40
2019-2020	7,643,300	87,300	1.16	100,200	13.19	61,000	8.03	39,200	48,100	6.33
2020-2021	7,729,700	86,400	1.13	100,700	13.10	62,400	8.11	38,300	48,100	6.26
2021-2022	7,815,100	85,400	1.11	101,000	13.00	63,700	8.20	37,300	48,100	6.19
2022-2023	7,899,400	84,400	1.08	101,400	12.90	65,100	8.29	36,300	48,100	6.12
2023-2024	7,982,700	83,200	1.05	101,800	12.82	66,600	8.39	35,100	48,100	6.06
2024-2025	8,064,700	82,100	1.03	102,200	12.73	68,200	8.50	34,000	48,100	5.99
2025-2026	8,145,600	80,800	1.00	102,500	12.65	69,800	8.61	32,700	48,100	5.93
2026-2027	8,222,800	77,200	0.95	103,000	12.58	73,900	9.03	29,100	48,100	5.88
2027-2028	8,301,300	78,600	0.96	103,500	12.53	73,000	8.84	30,500	48,100	5.82
2028-2029	8,378,800	77,400	0.93	104,100	12.49	74,800	8.97	29,300	48,100	5.77
2029-2030	8,455,100	76,400	0.91	104,900	12.46	76,600	9.10	28,300	48,100	5.71
1980-1990		734,300		705,300		339,800		365,000	369,200	
1990-2000		1,027,500		787,600		404,800		382,700	644,700	
2000-2010		854,600		843,100		447,400		365,700	488,800	
2010-2020		894,600		969,100		563,300		405,800	488,800	
2020-2030		811,900		1,025,100		694,300		330,900	481,000	
2000-2030		2,561,100		2,859,700		1,724,500		1,135,200	1,350,200	

\*Rates are calculated per 1,000-midpoint population.

SOURCES: Forecasts of the State Population: November 2004 Forecast, Washington State Office of Financial Management.